

## **REMARKS/ARGUMENTS**

The Applicants originally submitted Claims 1-21 in the application. In the present response, the Applicants have amended Claims 1, 8, and 15. Support for the amendment can be found, for example, in paragraphs 23 and 28 and Figures 3 and 4 of the original specification. No other claims have been canceled or added. Accordingly, Claims 1-21 are currently pending in the application.

### **I. Formal Comments and Remarks**

The Examiner again relies on paragraphs 2-4 of the present application to reject Claims 1-21 and refers to these paragraphs as Applicant Admitted Prior Art (AAPA). (*See* Examiner's Action mailed December 11, 2006, pages 4, 7, 10, and 12.) Contrary to the Examiner's assertion, the Applicants do not admit that the teaching of paragraphs 2-4 are prior art. Instead, the Applicants refer to the cited paragraphs as BACKGROUND OF THE INVENTION. Thus, the Applicants will continue to use AAPA to avoid confusion with the Examiner's Action, but more strongly indicates that the use of AAPA is not an admission that the background material of paragraphs 2-4 of the present application is prior art.

### **II. Rejection of Claims 1-21 under 35 U.S.C. §112**

The Examiner has rejected Claims 1-21 under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement and the enablement requirement. More specifically, the Examiner states the claims contain subject matter that was not described in the specification and thus, would not enable one skilled in the art to make and/or use the invention. (*See* Examiner's

Action mailed December 11, 2006, pages 2-3.) In response, the Applicants have amended independent Claims 1, 8, and 15 to render this rejection moot.

Support for the amended independent claims can be found in paragraphs 23 and 28 and Figures 3 and 4 of the original specification which describe and illustrate a constellation of ideal symbols in an array and the novel zero-amplitude symbol that interrupts the regular array. Furthermore, one of ordinary skill in the art would understand that ideal symbols in a conventional QAM constellation are equidistant from each other and in a regular array. As such, amended independent Claims 1, 8, and 15 and Claims that depend thereon comply with the requirements of § 112, first paragraph. Accordingly, the Applicants respectfully request the Examiner to withdraw the § 112, first paragraph rejection of Claims 1-21 and allow issuance thereof.

### **III. Rejection of Claims 1, 3, 6, 8, 10, and 13 under 35 U.S.C. §103**

The Examiner has rejected Claims 1, 3, 6, 8, 10, and 13 under 35 U.S.C. §103(a) as being unpatentable over AAPA in view of U.S. Patent number 4,562,425 to Turner, *et al.*, and in further view of U.S. Patent No. 6,553,087 to Alelyunas, *et al.* The Applicants respectfully disagree. More specifically, the Applicants disagree since the cited combination does not teach or suggest a zero-amplitude symbol interrupting a regular array of a constellation of symbols, wherein ideal symbols of the regular array are substantially equidistant to each other as recited in amended independent Claims 1 and 8.

AAPA discloses a communication system with an “end-of-file” or “end of subframe” condition in the Home Phoneline Networking Alliance standard that is misinterpreted using known modulation techniques. (*See* original specification, paragraphs 2-6.) Turner discloses a QAM

constellation comprising a zero-amplitude symbol as part of a regular array of symbols in a constellation arranged on a Cartesian plane. (See column 4, line 56 through column 5, line 20; column 5, line 39-56; and Figures 4-5, 8, and 14-15.) Alelyunas discloses a slicer that chooses from a set of possible valid receivable levels which most closely matches a received signal. (See column 3, lines 25-45 and Figure 2.) The Examiner reinforces Alelyunas by citing Messerschmidt and Lee. (See Examiner's Action mailed December 11, 2006, page 6.)

The Applicants, however, do not find where AAPA, Turner, Alelyunas, or Messerschmidt and Lee alone, or in combination, teach or suggest a zero-amplitude symbol interrupting a regular array of a constellation of symbols, wherein ideal symbols of the regular array are substantially equidistant to each other as recited in amended independent Claims 1 and 8.

AAPA, Turner, Alelyunas, and Messerschmidt and Lee all disclose constellations with ideal symbols that are regular and equidistant from each other, but none discloses a symbol that interrupts this regular array of ideal symbols in a constellation. More importantly, none of these references disclose a zero-amplitude symbol interrupting the regular array of constellation of symbols, wherein ideal symbols of the regular array are equidistant to each other.

Thus, while the combination of AAPA, Turner, Alelyunas, and Messerschmidt and Lee (as supported by Messerschmidt and Lee) may teach or suggest mapping received signals on a known constellation in a slicer and selecting the ideal symbol in the constellation most close to the received signal level, the Applicants fail to see where the combination would teach or suggest a symbol interrupting a regular array of a constellation of symbols, wherein ideal symbols of the regular array are substantially equidistant to each other as recited in amended independent Claims 1 and 8. As such, the combination of AAPA, Turner, and Alelyunas does not provide a *prima*

*facie* case of obviousness of amended independent Claims 1 and 8 and Claims dependent thereon. Accordingly, the Applicants respectfully request the Examiner to withdraw the §103(a) rejection of Claims 1, 3, 6, 8, 10, and 13 and allow issuance thereof.

**IV. Rejection of Claims 2, 4-5, 7, 9, 11-12, and 14 under 35 U.S.C. §103**

The Examiner has rejected Claims 2, 4-5, 7, 9, 11-12, and 14 under 35 U.S.C. §103(a) as being unpatentable over AAPA in view of Turner, in further view of Alelyunas, and in further view of U.S. Patent No. 5,471,508 to Koslov. The Applicants respectfully disagree.

As argued above the cited combination of AAPA, Turner, and Alelyunas does not provide a *prima facie* case of obviousness of amended independent Claims 1 and 8. The Examiner has not cited Koslov to cure the deficiency of the cited combination but to teach the subject matter of the above mentioned dependent Claims. (See Examiner's Action mailed December 11, 2006, page 7-9.) Additionally, the Applicants do not find where Koslov cures the deficiency of the cited combination. As such, the above cited combination and Koslov does not provide a *prima facie* case of obviousness of amended independent Claims 1 and 8 and Claims that depend thereon. Accordingly, the Applicants respectfully request the Examiner to withdraw the §103(a) rejection of Claims 2, 4-5, 7, 9, 11-12, and 14 and allow issuance thereof.

**V. Rejection of Claims 15, 17, and 20 under 35 U.S.C. §103**

The Examiner has rejected Claims 15, 17, and 20 under 35 U.S.C. §103(a) as being unpatentable over Alelyunas in view of a portion of a textbook prepared by Rappaport, in further view of AAPA, and in further view of Turner. The Applicants respectfully disagree.

As argued above, the combination of Alelyunas, AAPA, and Turner does not teach or suggest a symbol interrupting a regular array of a constellation of symbols, wherein ideal symbols of the regular array are substantially equidistant to each other as recited in amended independent Claims 1 and 8. Analogously, the cited combination does not teach or suggest the same in amended independent Claim 15. The Examiner has not cited Rappaport to cure the deficiency of the cited combination but to teach an amplitude detector. (See Examiner's Action mailed December 11, 2006, pages 10-11.) Additionally, the Applicants do not find where Rappaport cures the deficiency of the cited combination. As such, the cited combination of Rappaport with Alelyunas, AAPA, and Turner does not provide a *prima facie* case of obviousness of amended independent Claim 15 and Claims that depend thereon. Accordingly, the Applicants respectfully request the Examiner withdraw the §103(a) rejection of Claims 15, 17, and 20 and allow issuance thereof.

**VI. Rejection of Claims 16, 18-19, and 21 under 35 U.S.C. §103**

The Examiner has rejected Claims 16, 18-19, and 21 under 35 U.S.C. §103(a) as being unpatentable over Alelyunas in view of Rappaport, AAPA, and Turner, and in further view of Koslov. The Applicants respectfully disagree.

As argued above, the combination of Alelyunas, Rappaport, AAPA, and Turner does not provide a *prima facie* case of obviousness of amended independent Claim 15 and Claims that depend thereon. The Examiner has not cited Koslov to cure the deficiency of the cited combination but to teach the subject matter of the above mentioned dependent claims. (See Examiner's Action mailed December 11, 2006, pages 13-14.) Additionally, the Applicants do not find where Koslov cures the deficiency of the cited combination. As such, the cited combination of Koslov with Alelyunas,

Rappaport, AAPA, and Turner does not provide a prima facie case of obviousness of amended independent Claim 15 and Claims that depend thereon. Accordingly, the Applicants respectfully request the Examiner withdraw the §103(a) rejection of Claims 16, 18-19, and 21 and allow issuance thereof.

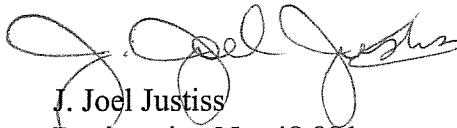
## VII. Conclusion

In view of the foregoing amendment and remarks, the Applicants now see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 1-21.

The Applicants request the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application. The Commissioner is hereby authorized to charge any fees, credits or overpayments to Deposit Account 08-2395.

Respectfully submitted,

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